



## **OPEN PhD Student POSITION**

**[4/2026/IGC/PSD] Announcement concerning recruitment  
to the Poznan Doctoral School of the Institutes of the Polish Academy of Sciences (PDS IPAS)  
as part of a research project**

The Director of the Institute of Human Genetics, Polish Academy of Sciences (IHG PAS),  
and Principal Investigator of the research project, **Marcin SAJEK, PhD**,  
gives notice of an open competition to be held for the position of  
**PhD student-scholarship holder at the Poznan Doctoral School of the Institutes PAS,  
in Bioinformatics Laboratory IHG PAS**  
Number of vacancies: **1**

### **I. General information**

1. Department in which candidate will work: **Bioinformatics Laboratory**
2. Discipline: **Medical Sciences**
3. Planned scholarship: **4300 PLN gross/per month (3800 PLN net/per month)** before the mid-term evaluation; **5500 PLN gross/per month (4900 PLN net/per month)** after the mid-term evaluation
4. Period of involvement in research project: **48 months (from 1 June 2026)**
5. Deadline for submission of documents: **12.04.2026**
6. Date of announcement: **10.03.2026**

The proposed study will be carried out within the project **OPUS 2025/57/B/NZ2/03836**  
financed by the National Centre of Science in Poland

**Principal Investigator:** Marcin Sajek, PhD

**Project title:** *'Integrative analysis of tRNA modification circuits and aminoacylation and their role in breast cancer model.'*

### **7. Description of research:**

Transfer RNAs (tRNAs) are the fundamental adaptors of translation, linking mRNA decoding and polypeptide synthesis. Biogenesis of tRNAs is complex: prior to aminoacylation and translation, primary transcripts undergo multiple trimming and modification events, yielding small (~76 nt) and densely modified (~13 modifications) RNAs. Many tRNA modifications are seemingly subtle but can profoundly impact tRNA function by increasing stability, optimizing aminoacylation efficiency, and expanding decoding capacity. Despite the central importance of tRNA modifications, their analysis remains a challenge due to a lack of incisive tools and integrated approaches that effectively handle their unique biochemical features. Such approaches are urgently needed as growing evidence indicates that installation of tRNA modifications is sequential and stepwise, forming modification circuits that underlie the quality control of tRNA biogenesis and functionality of mature tRNA molecules. Many human cancers have been associated with genetic alterations to tRNA modification enzymes, which impact tumorigenesis

and metastasis by altering aspects of tRNA biogenesis and function during ribosomal translation. But because tRNA modification circuits are poorly characterized, there is a major gap in our understanding of how molecular changes in tRNA modification cause cellular transformation and tumor development, and how these alterations might be therapeutically targeted. We recently developed aa-tRNA-seq - method for sequencing intact aminoacylated tRNAs based on nanopore direct RNA sequencing. aa-tRNA-seq simultaneously captures modification signatures and charging state at the single molecule level. Within these proposals we plan to use aa-tRNA-seq supplemented by other methods (e.g. CLIP-seq, ribo-seq) to better understand tRNA abundance, modification, and aminoacylation in cancer systems biology utilizing breast cancer model. We plan to dissect the impacts of an archetypal modification circuit for tRNA and mRNA driving selective translation and define causal relationships between cancer-relevant tRNA modifications. The new models and approaches proposed in this project will be an important step toward systematic characterization of tRNA functions in the context of cancer biology

**Keywords:** tRNA modifications, tRNA aminoacylation, modification circuits, machine learning, nanopore direct RNA sequencing

**Predicted tasks in the project:**

- active participation in the realization of project goals
- preparing the scripts for data analysis
- code maintenance
- analysis and interpretation of obtained results
- presentations at seminars and conferences
- preparation and writing of scientific papers

**Opportunities:**

- getting familiar with modern computational biology analyses
- participation in national and international trainings, conferences and workshops
- working with a international team enthusiastic about science (IHG PAS nad University of Colorado)
- access to HPC cluster

**II. Requirements for candidates**

- master's degree in bioinformatics, computational biology, molecular biology, biotechnology or a related field
- knowledge about RNA biology
- basic/mid-level skills in R and/or python programming
- basic knowledge about ML algorithms
- very good written and oral communication in English
- motivation and enthusiasm about working in science
- good collaborative and team work skills
- mobility and flexibility in work time (collaboration with the team from MST time zone)

### III. Required documents

1. CV, including research achievements, scientific activities, list of publications.
2. Cover letter featuring a short description of research interests, achievements and justification for the intention to commence education at the doctoral school.
3. Certified copy of the diploma confirming completion of a Master's Studies Programme, or a certificate of their completion (in the case of diplomas issued by foreign institutions, giving the right to apply for a doctoral degree in the country of origin. More information about foreign diplomas is available at: <https://nawa.gov.pl/en/recognition/recognition-for-academic-purposes/applying-for-admission-to-doctoral-studies>.) If a document that raises doubts is submitted, the application will not be considered because the time required for its verification would make it impossible to complete the competition within the set deadline. We recommend a submission of the Individual Recognition Statement, obtained from the SYRENA system or another government institution, which can significantly speed up the recruitment process.  
If the candidate does not have the above-mentioned documents, s/he is obliged to provide them before being admitted to Poznan Doctoral School IPAS.
4. Contact details of at least one current supervisor or other researcher who has previously agreed to issue an opinion about the candidate. The opinion should not be included in the application.
5. Application for admission to the Poznań Doctoral School IPAS, together with a consent to the processing of personal data for the purposes of the recruitment procedure plus a statement on his/her familiarity with recruitment regulations for the Poznań Doctoral School using form downloaded from: [https://psd-ipan.ichb.pl/wp-content/uploads/2024/10/IHG\\_Application\\_for\\_admission\\_01\\_10\\_24.docx](https://psd-ipan.ichb.pl/wp-content/uploads/2024/10/IHG_Application_for_admission_01_10_24.docx)  
Applications without the aforementioned content will not be considered.
6. Certificates or other documents indicating level of English language proficiency, if the candidate possesses any.

### IV. Criteria for the evaluation of candidates

1. Candidate's scientific and professional experience based on his/her:
  - scientific papers
  - programming skills
  - background knowledge in RNA biology
  - conferences, workshops, training courses and internships
  - participation in research or commercial projects
  - involvement in scientific societies and associations
  - international and professional mobility
  - experience in other sectors, including industry
2. Candidate's scientific achievements, based on study grades, scientific and popular science publications, scholarships; prizes and awards resulting from research carried out; student activity or other achievements.
3. Communication skills in English.

## V. Announcement of results

Up to 45 days after the deadline of documents submission.

## VI. Additional conditions

A condition of involvement in the project is participation in the Poznan Doctoral School of the Institutes of PAS (after passing the recruitment procedure). Details of the studies are available on <https://igcz.poznan.pl/en/phd-studies/poznan-doctoral-school-of-institutes-of-pas/>

followed by the fulfillment of requirements as set out in the Regulations for Granting Scholarships in Research Grants Financed by the National Research Center are available on website:

[https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2019/uchwala25\\_2019-zal1\\_ang.pdf](https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2019/uchwala25_2019-zal1_ang.pdf).

## VII. Additional information

Address to which documents should be submitted by e-mail: [phdstudies@igcz.poznan.pl](mailto:phdstudies@igcz.poznan.pl) with the number of the announcement: **4/2026/IGC/PSD** in the title of your message.

**Additional information is available from:**

- PI of the project – Macin Sajek,
- Secretary for Scientific purposes: [phdstudies@igcz.poznan.pl](mailto:phdstudies@igcz.poznan.pl)

### APPLICATION SENT AFTER THE DEADLINE WILL NOT BE CONSIDERED

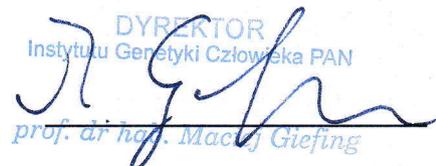
Once the recruitment process is finished, unsuccessful candidates will be informed about the scores they have obtained at each step of evaluation.

Refusal of admission to PDS IPAS takes place by way of an administrative decision. The candidate is entitled to submit a request for reconsideration of the decision to the Director of the Institute concerned.

Principal Investigator



Director of the Institute

DYREKTOR  
Instytutu Genetyki Człowieka PAN  
  
prof. dr h.c. Maciej Giefling